

Exhibit B
Overview of State and Federal Fisheries/Marine Environment Management Programs
July 2001

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<ul style="list-style-type: none"> • Alaska Governor's Office • Division of Governmental Coordination • Develop & implement the Alaska Coastal Management Program (ACMP) and staff the Coastal Policy Council. Development projects are reviewed for consistency with the Standards of the ACMP and enforceable policies of coastal district plans. Standards set the criteria to ensure coastal habitats are maintained or enhanced, and that air, land and water quality standards are met to ensure healthy, productive coastal ecosystems. • Coastal Impact Assistance Program • Under the Coastal Impact Assistance Program, Alaska will receive a one-time appropriation of \$7.9 million (another \$4.27 million is congressionally allocated to eligible coastal communities). Uses of the CIAP funds must be consistent with the authorized uses in the legislation, including: conservation, restoration, enhancement or protection of coastal or marine habitat, wetlands, watersheds and water quality; research, mapping and education; and implementation of federal conservation management plans. • Regulatory Authority: Yes - AS 46.40; 6 AAC 50, 80, & 85 • Personnel: 27 • Budget: \$4.52 million • See attached web site information for: • Alaska Coastal Management Program • Coastal Policy Council • Coastal Impact Assistance Program 			X	X	
			X	X	

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• Alaska Department of Fish & Game • The Alaska Department of Fish and Game is constitutionally mandated to protect, maintain, and improve the fish, game and aquatic plant resources of the state. The primary goals are to ensure that Alaska's renewable fish and wildlife resources and their habitats are conserved and managed on the sustained yield principle, and the use and development of these resources are in the best interest of the economy and well-being of the people of the state. • Guiding Principles • Seeking excellence in carrying out its responsibilities under state and federal law, the department will: • Provide for the greatest long-term opportunities for people to use and enjoy Alaska's fish, wildlife and habitat resources. • Improve public accessibility to, and encourage active involvement by the public in, the department's decision making processes. • Build a working environment based on mutual trust and respect between the department and the public, and among department staff. • Maintain the highest standards of scientific integrity and provide the most accurate and current information possible. • Foster professionalism in department staff, promote innovative and creative resource management, and provide ongoing training and education for career development. • Regulatory Authority: Yes – Alaska Statute 16. Chapters 5,10,20, 25,40,43,45, 95	X	X	X	X	X
• Board of Fish - Alaska Department of Fish & Game • Promulgates regulations to conserve, develop and use Alaska's fish resources; considers impact of and actions regarding fisheries disaster; and fosters public participation in the regulatory management of fish resources. • Regulatory Authority – Yes (see under Alaska Department of Fish & Game, General) • Personnel: 9 • Budget: \$.75 million	X	X	X	X	X
• Habitat and Restoration Division - Alaska Department of Fish & Game • The Division issues and reviews permits for activities affecting fish bearing waters, state game refuges, critical habitat areas and sanctuaries; participate in planning and permitting other land management agencies activities to make sure fish and wildlife populations remain healthy as Alaska develops mining, oil and gas, forest products, transportation and community-based resources; develop, contract and administer various habitat restoration projects. • Habitat Section (1) administers a permit program that provides proper protection of waterbodies used by anadromous fish, ensures fish passage in fresh waters, and	X	X	X	X	

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<p>maintains the fish and wildlife values of state game refuges, critical habitat areas, and sanctuaries; and</p> <ul style="list-style-type: none"> participates with other agencies in land use planning for leasing, sale, and permitting activities to ensure that fish and wildlife resources, and access to those resources, are maintained. <p>The Habitat Section is active in land and resource development activities throughout Alaska. For project and plan reviews, the division acquires and analyzes biological, engineering, hydrological and other technical information, including information on fish and wildlife abundance, habitat use, human use, and associated economic values. A closely related third duty of this section is to recommend ways to mitigate negative effects of development activities on fish and wildlife. In this effort, the division works closely with industry and other departments to find practical, cost-effective, and fair up-front solutions to potential problems. Some of this work occurs under the Special Projects component and is funded through cooperative industry-sponsored or interagency agreements and research. Habitat Section tasks include:</p> <ul style="list-style-type: none"> - reviewing roughly 3,000 permit applications annually; - actively managing over 3.0 million acres of legislatively designated state game refuges, critical habitat areas, and game sanctuaries; - participation in planning for: - use of at least 8.9 million acres of Alaska lands; - up to 15 federal and state oil and gas lease sales; - 22 million acres of State, National Forest, private and borough lands; and - assistance to as many as 15 coastal districts in preparing and implementing coastal management plans. <p>Restoration Section</p> <ul style="list-style-type: none"> The Restoration Section develops and conducts a wide variety of injury assessment and restoration projects, and develops comprehensive restoration plans that will govern use of Exxon Valdez settlement funds through the year 2003. Restoration Section tasks include: - development, implementation and completion of Annual Restoration Work Plans; - conducting or administering 15-30 restoration projects costing \$8-20 million; - participation on the Trustee Council's Restoration Team; - coordination within the department and between agencies on a wide range of oil spill restoration issues. <p>Special Projects</p> <ul style="list-style-type: none"> Kenai River Habitat Protection and Streambank Restoration Kachemak Bay - National Estuarine Research Reserve Streambank Revegetation and Protection: A Guide for Alaska Karluk River: Access and Use Information Chuit River: Access and Use Information State of Alaska Forest Practices Act National Marine Fisheries Service Kenai River Grant Alaska Coastal Management Program (ACMP): Development and Implementation 			X	X	

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<ul style="list-style-type: none"> Regulatory Authority – Yes (see under Alaska Department of Fish & Game, General) Personnel: 119 Budget: \$11.96 million 	X	X	X	X	X
<ul style="list-style-type: none"> Division of Commercial Fish - Alaska Department of Fish & Game The mission of the Division of Commercial Fisheries is to manage, protect, rehabilitate, enhance, and develop fisheries and aquatic plant resources in the interest of the economy and general well-being of the state, consistent with the sustained yield principle and subject to allocations established through public regulatory processes. The division is responsible for management of the state's commercial, subsistence, and personal use fisheries; the rehabilitation and enhancement of existing fishery resources; and the development of new fisheries. Technical support is provided to the private sector mariculture and salmon ranching industries. The division also plays a major role in the management of fisheries in the 200-mile Exclusive Economic Zone and participates in international fisheries negotiations. 	X				X
<ul style="list-style-type: none"> Gene Conservation Laboratory The mission of the Alaska Department of Fish and Game Gene Conservation Laboratory is to identify the distribution of genetic diversity for fish and shellfish that are commercially important to the State of Alaska. We identify the genetic relationships among discrete stocks by using genetic markers detected through molecular genetic assays. These markers primarily include allozyme variants (protein electrophoresis), mitochondrial DNA (mtDNA) haplotypes, and microsatellite variants. 	X	X	X	X	
<ul style="list-style-type: none"> Soldotna Limnology Laboratory The primary function of the work done by the Limnology Laboratory is to determine the number of salmon a lake can support. Similar to the range managers in the midwest recommending to ranchers how many acres are needed to support a cow, limnologists make recommendations as to how many salmon can feed successfully in any particular lake. This determination comes after a complex study of the food resources for fish in a lake. 	X				X
<ul style="list-style-type: none"> Pathology The Fish Pathology Section monitors and controls finfish and shellfish diseases statewide (according to Title 16 of the Alaska Statutes) by conducting diagnostic surveys, developing finfish and shellfish disease policies and by advising the Commissioner of the Alaska Department of Fish and Game and other state and federal authorities on fish disease issues. 	X	X	X	X	X
<ul style="list-style-type: none"> Mark, Tag and Age Laboratory This laboratory will assist in determining the characteristics of salmon that are brought in. If the fish was properly tagged, the lab can determine whether the sample is a hatchery fish, a wild fish, its age and natural migratory pattern, where it was born, where it died, and what kind of life it generally led. 					
<ul style="list-style-type: none"> Mariculture 					

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<ul style="list-style-type: none"> The Office of Mariculture oversees the permitting and application requirements for establishing a shellfish aquaculture operation. Regulatory Authority – Yes (see under Alaska Department of Fish & Game, General) Personnel: 861 Budget: \$47.99 million 					
<ul style="list-style-type: none"> Commercial Fisheries Entry Commission - Alaska Department of Fish & Game Promotes conservation, sustained yield management and an economically stable fishing industry by regulating entry into commercial fisheries, issuing permits and vessel licenses, adjudicates permit disputes and conducts extensive research prior to limiting a fishery. Regulatory Authority – Yes (see under Alaska Department of Fish & Game, General) Personnel: 36 Budget: \$2.90 million See attached web site information for: <ul style="list-style-type: none"> Sustainable Salmon Fisheries Policy for the State of Alaska Alaska Fishery Research Bulletin Habitat and Restoration Division – Fish Habitat and Special Areas Permit Forms Habitat and Restoration Division – Title 16: Fish Habitat Permit Habitat and Restoration Division – State of Alaska Refuges, Critical Habitat Areas and Sanctuaries Habitat and Restoration Division – Recreational Suction Dredging Permit Applications Habitat and Restoration Division – Special Areas Permit Application Habitat and Restoration Division – Kenai River Habitat Protection and Streambank Restoration Habitat and Restoration Division – Kachemak Bay, National Estuarine Research Reserve Habitat and Restoration Division – Streambank Revegetation and Protection: A Guide for Alaska\ Habitat and Restoration Division – Karluk River Habitat and Restoration Division – Chuit River Habitat and Restoration Division – - National Marine Fisheries Service Kenai River Grant Habitat and Restoration Division – Alaska Coastal Managemetn Program: Development and Implementation Division of Commercial Fisheries - Commercial Fishery Publication By Series Division of Commercial Fisheries - Statewide Fish Pathology Division of Commercial Fisheries – Taglab.org Division of Commercial Fisheries - The Soldotna Limnology Laboratory 					

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• Division of Commercial Fisheries – Gene Conservation Laboratory					

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<ul style="list-style-type: none"> Alaska Department of Environmental Conservation To promote and develop programs to protect and control the environment of the state; regulate and enforce discharges to air, water and ground; pollution prevention (industry preparedness and underground storage tank programs, facility and construction of sewage lagoons, landfills.) 			X	X	
<ul style="list-style-type: none"> Division of Air & Water Quality - Alaska Department of Environmental Conservation The mission of the Water Quality Standards program is to protect public health, public and private water systems, and the environment of the state from pollutants, including pesticides. The Division accomplishes this through management of wastewater, drinking water, and administering the Alaska Clean Water Fund. Special programs: <ul style="list-style-type: none"> Alaska Cruise Ship Initiative Air and Water Quality Nonpoint Source Pollution Control Program Wetlands Assessment Guidebooks Swan Lake Watershed Recovery Strategy The Functions Of Precipitation-Driven Wetlands On Discontinuous Permafrost In Interior Alaska Final Nonpoint Pollution Strategy Cook Inlet Information Management and Monitoring System (CIMMS) 			X	X	
<ul style="list-style-type: none"> Environmental Health - Alaska Department of Environmental Conservation The Division of Environmental Health handles issues related to proper solid waste or sewage disposal, public drinking water supplies, food processing or food service, pesticide use, and sanitary public facilities like pools, day care centers, and overnight accommodations. The Division accomplishes this through establishing standards for construction, operating and closures, providing technical assistance, training and certifying, conducting inspections, and certifying and accrediting laboratories for testing. Specific focus areas include: drinking water, wastewater, seafood processing & development, solid waste, food safety & sanitation, pesticides, and animal industries. 			X	X	
<ul style="list-style-type: none"> Division of Spill Prevention & Response - Alaska Department of Environmental Conservation The Division of Spill Prevention & Response works to avoid oil and chemical spills. If spills occur, the Division has in place appropriate emergency responses to minimize the damage from the accident and capture as much pollutants as possible. 			X	X	

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<ul style="list-style-type: none"> Regulatory Authority – Yes (Alaska Statutes 46, 44, 41) Personnel: 428 Budget: \$43.74 million See attached web site information for: <ul style="list-style-type: none"> 18 AAC 70 Water Quality Standards Alaska Clean Water Action Plan Division of Air and Water Quality – Non Point Source Water Pollution Control Division of Air and Water Quality – Non Point Source Water Pollution Control Strategy Division of Air and Water Quality – Air Water Quality Non Point Source Water Pollution Control Program – Water Quality Grants Division of Air and Water Quality – State Water Discharge Permit and Certification Division of Air and Water Quality – Guiding Principles and 10 Recommendations for A New and Improved Alaska Permitting Program Division of Air and Water Quality – Wetlands Assessment Guidebook Division of Air and Water Quality – Alaska Cruise Ship Initiative Division of Environmental Health – Safe Water Division of Environmental Health – Healthy Communities Division of Spill Prevention and Response – Industry Preparedness and Pipeline Program Division of Spill Prevention and Response – Community Spill Response Division of Spill Prevention and Response – Spill Reporting 					

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<ul style="list-style-type: none"> Alaska Department of Natural Resources The Department of Natural Resources' goal is to contribute to Alaska's economic health and quality of life by protecting and maintaining the state's resources, and encouraging wise development of these resources by making them available for public use. The Department of Natural Resources manages all state-owned land, water and natural resources, except for fish and game, on behalf of the people of Alaska. When all land conveyances from the federal government are completed, the people of the state will own land and resources on 106 million acres: Approximately 90 million acres have been conveyed so far. The state owns approximately 65 million acres of tidelands, shorelands, and submerged lands and manages 34,000 miles of coastline. The state also owns the freshwater resources of the state, a resource that equals about 40% of the entire nation's fresh water. 			X	X	
<ul style="list-style-type: none"> Division of Mining, Land & Water The Division of Mining, Land & Water is the primary manager of Alaska's land holdings. Responsibilities include ensuring the state's title; preparing land-use plans and easement atlases; classifying land; leasing and permitting state land for recreation, commercial and industrial uses and coordinating and overseeing the needed authorizations for major development on the North Slope. It manages 2.5 million acres in Public Use and Recreational River Systems. The division is responsible for land sales and conveyances to municipalities. The division also manages mineral (excluding oil & gas, coalbed methane and geothermal energy) and water resources. It manages state mineral exploration, development and leasing programs on the 96 million acres of state lands available for mineral exploration and mining and administers state's Surface Coal Mining control and Reclamation Program. The division allocates and manages the state's water resources on all lands in Alaska, adjudicates water rights, provides technical hydrologic support, and assures dam safety. Water Resources Section Allocates and manages the state's water resources on all lands in Alaska. This section adjudicates water rights, provides technical hydrologic support, and assures dam safety. The Water Management Unit grants property rights and issues temporary authorizations for the use of public waters; facilitates the maximum use of the water resource consistent with public interest; and provides certainty and security of water property rights. The Hydrologic Survey Unit collects, analyzes, interprets, and reports on Alaska's waters, including wetlands, glaciers, and coastal waters; provides scientific advice and hydrologic data on the quantity and quality of Alaska's surface and subsurface waters. The Dam Safety Unit protects public safety and property through the safe operation and construction of jurisdictional dams; conducts safety inspections; issues permits to construct, modify, or operate dams; and tests emergency action plans. 			X	X	
<ul style="list-style-type: none"> See attached web site information for: Division of Mining, Land & Water – Organization of Division by Sections Division of Mining, Land & Water – Alaska Hydrologic Survey 					

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<ul style="list-style-type: none"> University of Alaska Fairbanks/School of Fisheries and Ocean Sciences The University of Alaska Fairbanks School of Fisheries and Ocean Sciences (SFOS) is home port for creative and dedicated people who wish to unveil the mysteries of our nation's northernmost seas and coasts. As students and faculty gain new insights to the workings of Alaska's coastal and marine ecosystems, the public outreach faculty and staff of SFOS share this new-found knowledge with policy makers, business people, educators, scientists, the Alaska public, and anyone else who has an interest in our northern seas. 	X	X	X	X	X
<ul style="list-style-type: none"> Alaska Sea Grant – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences Alaska Sea Grant helps bolster the long-term value of Alaska's marine resources by funding scientific research on marine ecosystems and the effects of human activity and natural environmental changes on ocean resources. The findings and other information are disseminated by a statewide network of Alaska Sea Grant Marine Advisory agents, resource specialists, and communications specialists. Below are the primary areas of research and public outreach. For descriptions of specific activities in these areas, see our project directory. The goals of the Alaska Sea Grant Program are: <ul style="list-style-type: none"> Assist in developing a policy consensus on marine environmental issues that have potential for dramatically affecting Alaska's lifestyles, communities, and employment. Provide an interdisciplinary forum for enhancing and maintaining broad discussion among the marine scientific community on issues related to the region's marine water quality, resources, and ecosystem. Work cooperatively with the fishing industry, resource managers, Alaska Natives, coastal communities, and other marine resource users to expand understanding of interactions within the marine ecosystem. Nurture and expand science communication among resource managers and scientists through Lowell Wakefield Symposia and other scientific meetings and workshops. 2.Distinguish between natural and human-induced changes in Alaska's marine and coastal ecosystems. For sound management of Alaska fisheries and other coastal resources, increase our understanding of changes occurring at different time and spatial scales in the ocean environment. Determine whether marine ecosystems have been disrupted by increases in contaminants, biotoxins, and nonindigenous species. 3.Encourage multidisciplinary approaches toward meeting the challenges of fishery management and enhancing economic growth through wiser utilization of stocks within sustainable harvest levels. Respond to current needs of fishery or resource managers. Work with resource managers and the fishing industry to seek new selective management strategies to improve the quality of the harvested product. Work with the fishing industry to test and encourage harvesting techniques that reduce bycatch and discards. 4.Increase value of the seafood industry by enhancing quality and encouraging development of new products and markets. 	X	X	X	X	X

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<ul style="list-style-type: none"> Develop new seafood and seafood-based products. To become more competitive in the world market, in partnership with Alaska Seafood Marketing Institute and the seafood industry, encourage innovative research and information transfer in areas of improving product quality, availability, and value-added utilization. 5. Increase public understanding of marine resources and the ecosystems that support them. Because Alaska's economy depends heavily upon natural resource utilization, increase public knowledge of the marine and coastal environments that support and affect tourism, fisheries, subsistence use, oil production, and other enterprises. Educate specialists to wisely manage the abundant natural resources in Alaska through graduate student support, development and distribution of scientific publications, and symposia. At the K–12 level, in partnership with frontline educators and programs such as Alaska Natural Resource and Outdoor Educators, stimulate innovative educational techniques and curricula. Respond to current resource issues of importance by gathering, packaging, distilling, and distributing information through books, press releases, videos, and lectures in a timely fashion. Current Sea Grant Projects include: <ul style="list-style-type: none"> Impacts on Salmon Industry: Long-Term Variability in Alaska Sockeye Salmon, Part 2: Effects of Past Warm Climate on Salmon Abundance Conserving Salmon Biodiversity: Outbreeding Depression in Pink Salmon—Completion Setting Escapement Goals to Account for Climatic Fluctuations and Uncertainty, Managing Salmon Fisheries for Quality, Maintaining Salmon Quality Aboard Fishing Vessels and On Shore Wiser Utilization of Fisheries: Precision of Prohibited Species Bycatch Estimates for Pooled and Individual Bycatch Quotas Marine Environmental Issues: Has Local Depletion of Walleye Pollock Occurred in Steller Sea Lion Critical Habitat? Diversification of Economy: Paralytic Shellfish Poisoning: Characterization of Saxitoxin Synthetic Genes 					
<ul style="list-style-type: none"> Fisheries Division – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences Fisheries in Alaska can only be described by superlatives—the greatest catches, the biggest resources, the longest coast in the nation. The world's most extensive and most valuable fisheries happen here in a spectacular setting. Conservation biology has had some of its greatest successes in Alaska waters over the past 50 years, sustained harvestability of halibut and salmon among them. But the challenges facing resource biologists today are more complex and demanding than ever. For example, how can the Alaskan pollock fishery, supplying the world with over a million tons of protein each year, be sustained without disruption to the supporting ecosystem? How can the world's last great wild salmon runs continue in the face of growing human competition for habitat? Students at the University of Alaska Fairbanks are preparing to enter this challenging arena, using applied biological techniques ranging from molecular genetics to hip-boot-and-outboard-motor field ecology, to biomathematical analysis of population models. Also, they are training broadly in disciplines outside of science because problem solving in fisheries deals with diverse aspects of life. 	X	X	X	X	X

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<ul style="list-style-type: none"> Institute of Marine Science – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences The Institute of Marine Science is the oldest and the largest unit of the School of Fisheries and Ocean Sciences, University of Alaska Fairbanks. The Institute is active in research and graduate training at the masters and doctoral levels, supports coastal facilities at Seward and Kasitsna Bay, Alaska and operates the 133-foot research vessel Alpha Helix for the National Science Foundation. Past IMS Projects include: <ul style="list-style-type: none"> Chukchi Sea—Circulation and Water Properties Tides of the Arctic Ocean, the Bering Sea and the Sea of Okhotsk AVHRR Archive—low and high resolution images of Alaska GAK1—Gulf of Alaska CTD Time Series updated 5/01 GLOBEC—Global Ocean Ecosystem Dynamics Isotope Ratio Mass Spectrometry Facility IMS Oceanographic Data Archive 					
<ul style="list-style-type: none"> Seward Marine Center – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences The primary coastal facility operated by IMS is the Seward Marine Center, located approximately 130 miles south of Anchorage at the head of Resurrection Bay. This facility provides access to salt water laboratories and the coastal environment. There are excellent laboratories, constant temperature chambers and a running seawater system. There is also a 4-plex apartment unit for visiting scientists. Scientists from other institutions are welcome to apply for research visits to the facility. 					
<ul style="list-style-type: none"> Kasitsna Bay Laboratory – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences The University of Alaska's Kasitsna Bay Laboratory is located on 15 wooded acres on the Kenai Peninsula in one of the most productive marine ecosystems in the world, Kachemak Bay. The facility, which is nine miles from the nearest town of Seldovia, overlooks Kasitsna Bay, a scenic embayment protected by McDonald Spit. The Bay is located on the south side of the much larger Kachemak Bay. Kasitsna Bay is a unique resource for marine research and teaching, perhaps the best such location in Alaska and one of the best in United States. Courses are offered at Kasitsna Bay each summer. Specific offerings vary from summer to summer. Examples of courses include: Biology and Ecology of Marine Invertebrates, Marine Phycology, Field Problems in Marine Biology and Marine Studies for Science Teachers. 	X	X	X	X	X
<ul style="list-style-type: none"> Marine Advisory Program Alaska Sea Grant – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences Through translation and communication of research-based information, the people of the University of Alaska Marine Advisory Program (MAP) help 					

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<p>Alaskans wisely develop, use, conserve, and enjoy Alaska's marine and coastal resources. MAP provides:</p> <ul style="list-style-type: none"> • Technical assistance to individuals and businesses that derive their livelihoods from the sea. • Information to state and local government agencies and other organizations whose decisions affect the sea and its use. • Educational resources for K-12 students and teachers. <p>MAP agents and specialists live and work in the communities they serve. The integration of MAP personnel with local communities provides for the efficient flow of information between the University of Alaska and the people. The primary subjects addressed by MAP agents and specialists are fisheries resources, marine safety, marine business assistance, seafood technology, aquaculture, marine recreation, marine mammals, seafood conservation, and seafood marketing.</p>	X	X	X	X	X
<p>• Marine Conservation</p> <p>In regards to marine conservation, MAP will work to increase public awareness of marine conservation issues and what they mean to Alaska, and apply research results toward conserving Alaska's marine resources.</p> <p>Objectives</p> <ul style="list-style-type: none"> • Develop courses, workshops, and publications on the conservation of Alaska's marine ecosystem. • Participate in coastal hazards research and education. • Conduct forums on coastal development. • Develop a water-quality education, monitoring, and enhancement program directed at maintaining or improving the quality of coastal marine waters of Alaska. • Develop an educational program on global change issues affecting Alaska's marine environment. • Increase awareness of marine and freshwater habitat preservation. • Continue educational work in the prevention and response to marine pollution. 			X	X	
<ul style="list-style-type: none"> • Fishery Industrial Technology Center – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences • Scientists and technicians at the Fishery Industrial Technology Center (FITC) in Kodiak, Alaska, work year-round to discover better methods to harvest, preserve, process, and package Alaska's rich ocean bounty. A state-of-the-art seafood research and development facility, FITC is a key component in the School of Fisheries and Ocean Sciences' effort to ensure the long-term productivity of Alaska's ocean resources. 					
<ul style="list-style-type: none"> • Related projects include: • Ecosystems and contaminants: Alaska seafood comes from some of the world's most pristine waters, but human-induced contaminants, such as hydrocarbons from oil spills, and natural phenomena, such as red tides, occasionally occur which can affect seafood quality. FITC researchers study the effects of hydrocarbons on fish flesh and how natural agents such as paralytic shellfish poisoning toxin develop in shellfish. FITC scientists also study the ecosystems within which Alaska seafood species thrive, which is knowledge critical to understanding how those species might be vulnerable to human-induced and natural contaminants and other habitat disturbances. 	X	X	X	X	X
<ul style="list-style-type: none"> • Harvesting Technology: Experts estimate that about a billion pounds of protein--much of it potentially usable--is wasted every year in the form of 					

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seafood processing wastes and discarded, as required by law, non-target fish and shellfish caught by ships at sea. FITC is committed to finding ways to reduce this waste. For example, our technicians study how fishing nets can be designed to capture fewer non-target fish, and our scientists develop techniques to more fully utilize the tissues of fish and shellfish after it reaches the processing plant.					
<ul style="list-style-type: none"> North Pacific Marine Research Program – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences The goal of NPMR is to increase understanding of the Bering Sea and adjacent waters, with the ultimate aim of developing predictive ability for ecological responses to natural and human-induced impacts. The program supports high quality projects which promise long-term results as well as those with more immediate applicability. The program focuses on several disciplines including biological oceanography, data & communications, fisheries oceanography, physical & chemical oceanography, and marine mammals 			X	X	
<ul style="list-style-type: none"> Coastal Marine Institute – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences The University of Alaska Coastal Marine Institute (CMI) was created by a cooperative agreement between the <u>University of Alaska</u> and the U. S. Department of the Interior <u>Minerals Management Service</u> Alaska Region (MMS), to study coastal topics associated with the development of natural gas, oil, and minerals in Alaska's outer continental shelf (OCS). Under this cooperative program, MMS taps the highly qualified scientific expertise at the University of Alaska to: Collect and disseminate environmental information needed for OCS oil, gas, and marine minerals decisions. Address local and regional OCS-related environmental and resource issues of mutual interest. Strengthen the partnership between MMS and the states by addressing OCS oil and gas and marine minerals information needs. Many of the CMI funded projects address a combination of issues related to fisheries, biomonitoring, physical oceanography, and the fates of oil. 		X	X	X	
<ul style="list-style-type: none"> Alaska Sealife Center – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences The Alaska SeaLife Center is affiliated with the University of Alaska Fairbanks, School of Fisheries and Ocean Sciences (UAF-SFOS) and has an appointed Science Director from that institution. The SeaLife Center is located in Seward, Alaska on a seven-acre waterfront site adjacent to the campus of the UAF-SFOS, Institute of Marine Science, Seward Marine Center, a marine laboratory and home port of Alaska's oceanographic vessel, Alpha Helix. The center is within close proximity to numerous seabird colonies, marine mammal concentrations and salmon spawning streams in Resurrection Bay and the adjacent Kenai Fjords National Park and Alaska Maritime National Wildlife Refuge. Among research projects conducted at the center, highest priority will be given to studies that further the restoration of injured resources in the EVOS-affected area. Research will initially focus on issues affecting recovery of marine mammals, marine birds and fish. Research programs at the center will be financed through the EVOS Restoration Program and other existing research funding sources. The center is planning for a \$6 million research endowment through private fund-raising. In fulfilling its rehabilitation mission, the center will serve as a regional stranding center, equipped to rehabilitate sick and injured marine birds, 	X	X	X	X	X

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pinnipeds, sea otters and small cetaceans. The center will also function as a key wildlife rehabilitation facility during natural and man-caused disasters.					
<ul style="list-style-type: none"> • Pollock Conservation Cooperative Research – University of Alaska – Fairbanks/School of Fisheries and Ocean Sciences • The PCC Research Center was established in February 2000 and seeks to improve knowledge about the North Pacific Ocean and Bering Sea through research and education, focusing on the commercial fisheries of the Bering Sea and Aleutian Islands. The Center provides: (1) grants and fellowships to faculty and graduate students for research on the fisheries, fish, and other species of the North Pacific and Bering Sea with an emphasis on pollock, other groundfish species, the fisheries for these species, and on Steller sea lions; (2) funding for marine education, technical training, and equipment; and (3) funding for research in the area of marine resource economics. While proposals in any of the above areas will be accepted, the PCC Research Center annually identifies subjects of particular interest and gives the highest consideration to proposals within these areas. • See attached web site information for: <ul style="list-style-type: none"> • Alaska Sea Grant – Home Page • Alaska Sea Grant – Working for Alaska • Alaska Sea Grant – Research and information on Alaska Coastal and Marine Issues • Institute of Marine Science – Chuckchi Sea Circulation • Institute of Marine Science – Gulf of Alaska Time Series • Institute of Marine Science – UAF Isotope Ration Mass Spectrometry Facility • Institute of Marine Science – Seward Marine Center Home Page • Institute of Marine Science – Kasitsna Bay Laboratory • Marine Advisory Program – Marine Mammals Program • Fishery Industrial Technology Center – Ecosystems and Contaminants • North Pacific Marine Research Program – Program Overview • North Pacific Marine Research Program – Fisheries Oceanography Home Page • North Pacific Marine Research Program – Fisheries Oceanography: Application of Elemental Fingerprinting to Larval Ecology, Stock Structure, Migration and Stock Mixing Problems of Walleye Pollock • North Pacific Marine Research Program – Fisheries Oceanography: A basin-wide retrospective analysis of growth and survival patterns in pink and chum salmon • North Pacific Marine Research Program – Fisheries Oceanography: Pilot study of the use of airborne lidar and digital imagery for surveys of epipelagic fish and associated biological features in the southeastern Bering Sea and North Pacific Ocean • North Pacific Marine Research Program – Fisheries Oceanography: Impacts of commercial trawling on essential fish habitat of the Bering Sea shelf • North Pacific Marine Research Program – Biological Oceanography Home Page • North Pacific Marine Research Program – Marine Mammals Home Page • North Pacific Marine Research Program – Physical and Chemical Oceanography Home Page 					

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• Agency	O	F	H	L	I
• Coastal Marine Institute – Home page					
• Coastal Marine Institute – Publications					
• Alaska SeaLife Center – List of Current Research, January 2001					
• Pollock Conservation Cooperative Research Center – Funded Projects					
• Pollock Conservation Cooperative Research Center – Funds Announcement					

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<ul style="list-style-type: none"> US Department of Commerce/National Oceanographic and Atmospheric Administration National Undersea Research Program/West Coast & Polar Region Center - US Department of Commerce/National Oceanographic and Atmospheric Administration The West Coast Center provides undersea platforms, tools and technology needed to aid scientific research within NOAA's mandate. Proposals should address the Center's programmatic themes listed below and should reflect the broader research priorities developed in the NURP Opportunities and Research Guidance for FY 1999 Funding. 			X	X	
<ul style="list-style-type: none"> NOAA Restoration Center - US Department of Commerce/National Oceanographic and Atmospheric Administration The NOAA Restoration Center is the focal point for the marine and estuarine habitat restoration within NOAA. The Restoration Center (housed in the National Marine Fisheries Service, Office of Habitat Conservation) performs restoration pursuant to federal legislation and improves the state of restoration ecology and habitat management. The Restoration Center (RC) has three main objectives, which it addresses by participating in a suite of litigation-related and non-litigation-related activities. These objectives are: <ul style="list-style-type: none"> To restore degraded coastal and estuarine habitats that are used by or are beneficial to NOAA trust resources; To advance the science underlying coastal habitat restoration and developing improved technology for archiving successful restoration; and To transfer restoration technology to the private sector, public, and other governmental agencies at the federal, state, and local level. 		X	X	X	
<ul style="list-style-type: none"> Fisheries-Oceanography Coordinated Investigations (FOCI) - US Department of Commerce/National Oceanographic and Atmospheric Administration FOCI is a collection of NOAA research programs attempting to understand the influence of environment on the abundance of various commercially valuable fish and shellfish stocks in Alaskan waters and their role in the ecosystem. FOCI comprises a number of programs: Shelikof Strait FOCI, Bering Sea FOCI, and Southeast Bering Sea Carrying Capacity, Arctic Research Initiative, West Coast GLOBEC, NSF Inner Front Study, and North Pacific Marine Research Program. Shelikof Strait FOCI and Bering Sea FOCI examine a specific species of fish, walleye pollock <i>Theragra chalcogramma</i>. Southeast Bering Sea Carrying Capacity takes a broader view of the ecosystem of the southern Bering Sea shelf. Other programs address scientific themes that directly relate to FOCI research. Research is conducted by personnel at two NOAA laboratories in Seattle, Washington (the National Marine Fisheries Service's Alaska Fisheries Science Center and the Office of Oceanographic and Atmospheric Research's Pacific Marine Environmental Laboratory), and by scientists at the University of Alaska and other academic and research institutes. 	X	X	X	X	X
<ul style="list-style-type: none"> Pacific Marine Environmental Laboratory - US Department of Commerce/National Oceanographic and Atmospheric Administration 			X	X	

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<ul style="list-style-type: none"> The Pacific Marine Environmental Laboratory (PMEL) carries out interdisciplinary scientific investigations in oceanography and atmospheric science. Current PMEL programs focus on open ocean observations in support of long-term monitoring and prediction of the ocean environment on time scales from hours to decades. Studies are conducted to improve our understanding of the complex physical and geochemical processes operating in the world oceans, to define the forcing functions and the processes driving ocean circulation and the global climate system, and to improve environmental forecasting capabilities and other supporting services for marine commerce and fisheries. Results from PMEL research activities contribute to NOAA's strategic goals of implementing seasonal-to-interannual climate forecasts, assessing and predicting decadal to centennial climate change, advancing short-term warning and forecast services, and building sustainable fisheries. 	X	X	X	X	X
<ul style="list-style-type: none"> Coastal Ocean Program - US Department of Commerce/National Oceanographic and Atmospheric Administration NOAA's Coastal Ocean Program (COP), part of the National Centers for Coastal Ocean Science (NCCOS), provides scientific information to assist decision makers to meet the challenges of managing our Nation's coastal resources. COP targets critical issues which exist in the Nation's estuaries, coastal waters, and Great Lakes. COP translates its findings into accessible information for coastal managers, planners, lawmakers, and the public. Its aim is to create near-term and continuous improvements in environmental decisions affecting the coastal ocean and its resources. The Coastal Ocean Program (COP) provides a focal point through which the agency, together with other organizations with responsibilities for the coastal environment and its resources, can make significant strides toward finding the solutions that will protect coastal resources and ensure their availability and well-being for future generations. Southeast Bering Sea Carrying Capacity Southeast Bering Sea Carrying Capacity (SEBSCC) is a NOAA Coastal Ocean Program Regional Ecosystem Study administered by the University of Alaska, Alaska Fisheries Science Center, and Pacific Marine Environmental Laboratory. SEBSCC's goal is to increase understanding of the southeastern Bering Sea ecosystem, to document the role of juvenile walleye pollock and factors that affect their survival, and to develop and test annual indices of pre-recruit (age-1) pollock abundance. See attached web site information for: NOAA Undersea Research Center NOAA Restoration Center – Introduction Pacific Marine Environmental Laboratory – Home Page Pacific Marine Environmental Laboratory – Overview Pacific Marine Environmental Laboratory –Bio-Physical Interactions Overview Pacific Marine Environmental Laboratory – Atmosphere & Ocean Interactions Overview Pacific Marine Environmental Laboratory – Environmental Chemistry Overview Pacific Marine Environmental Laboratory – Atmospheric Science Overview Pacific Marine Environmental Laboratory – Marine Biology Overview Pacific Marine Environmental Laboratory – Marine Biology: Marine Mammals 	X	X	X	X	X

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• Pacific Marine Environmental Laboratory – Marine Biology: Birds					
• Pacific Marine Environmental Laboratory – Marine Biology: Fish					
• Pacific Marine Environmental Laboratory – Marine Biology: Invertebrates					
• Pacific Marine Environmental Laboratory – Marine Biology: Phytoplankton					
• Pacific Marine Environmental Laboratory – Marine Biology: Zooplankton					
• Pacific Marine Environmental Laboratory – Physical and Biological Sciences of the Bering Sea and North Pacific Ocean Overview					
• Pacific Marine Environmental Laboratory – Bering Sea and North Pacific Ocean Theme Page					
• Pacific Marine Environmental Laboratory – Trophic Guild					
• Pacific Marine Environmental Laboratory – Publications					
• Pacific Marine Environmental Laboratory – Research Activities					
• Pacific Marine Environmental Laboratory – Southeast Bering Sea Carrying Capacity					
• Coastal Ocean Program – Center for Sponsored Coastal Ocean Research					
• Coastal Ocean Program – Pacific Northwest Ecosystem					
• Coastal Ocean Program – Bering Sea Ecosystem					

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<ul style="list-style-type: none"> US Department of Commerce/National Oceanographic and Atmospheric Administration – National Marine Fisheries Service – Alaska Region Rebuild and maintain sustainable fisheries; promote the recovery of protected species; and protect and maintain the health of coastal marine habitats by monitoring development, water and sediment contamination, water diversion for industrial agriculture, sedimentation, and dredging and filling activities; lead research to restore and create fish habitat, review coastal development and water projects that may alter or destroy habitat, and recommend measures to offset impacts of development and use. 	X	X	X	X	X
<ul style="list-style-type: none"> Sustainable Fisheries - National Marine Fisheries Service - Alaska Region This division implements the US Sustainable Fisheries Act and other laws as prescribed by Congress. 	X	X	X	X	X
<ul style="list-style-type: none"> Office of Law Enforcement - National Marine Fisheries Service - Alaska Region The NOAA/NMFS Office for Law Enforcement is dedicated to the conservation and protection of our nation's natural resources. In Alaska, we have a diverse and large area to cover. The industries we regulate are the largest in the United States and the species we protect are numerous. 					
<ul style="list-style-type: none"> Office of Oil Spill Damage Assessment and Restoration - National Marine Fisheries Service - Alaska Region The Exxon Valdez Office of Oil Spill (EVOS) Damage Assessment and Restoration manages research and monitoring projects for the Exxon Valdez Trustee Council. Several National Oceanic and Atmospheric Administration (NOAA) agencies are involved in these research and monitoring efforts including the Auke Bay Laboratory (ABL), National Marine Fisheries Service (NMFS), and many contractors. NOAA is represented on the Exxon Valdez Trustee Council by the Alaska Regional Administrator of the National Marine Fisheries Service. 			X	X	
<ul style="list-style-type: none"> Habitat Conservation Division - National Marine Fisheries Service - Alaska Region Coordinating with individuals, industry, and local and state government, the Habitat Conservation Division (HCD) initiates methods to avoid or minimize the effect developments have on living marine resources and their habitat in Alaska. This effort results in the preparation of environmental documents including pre-application planning, watershed planning, and mitigation to identify feasible alternatives and provide realistic recommendations to protect and conserve valuable living marine resources. HCD focuses on activities in the near shore coastal zone as well as some inland anadromous streams. HCD also considers actions affecting offshore living marine resources, especially those that may be impacted by oil and gas development, mining, or commercial fisheries. 		X	X	X	
	X	X	X	X	X

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<ul style="list-style-type: none"> Protected Resources Division - National Marine Fisheries Service - Alaska Region The Protected Resources Division (PRD), with offices in Juneau and Anchorage, is responsible for developing management and conservation programs for all but three species of marine mammals in Alaska, and for providing regional policy guidance on marine mammal and other protected species issues. In administering provisions of the Marine Mammal Protection Act (MMPA), the Endangered Species Act (ESA), the Fur Seal Act, and the Magnuson-Stevens Fishery Conservation Act, the biologists and staff of the PRD work with other NMFS offices to develop regulations and management measures to protect, conserve and restore marine mammal populations. Protected Resource Division handles matters regarding the National Environment Policy Act. 					
<hr/> <ul style="list-style-type: none"> See attached web site information for: United States Magnuson Stevens Fishery Conservation Act – Table of Contents United States Sustainable Fisheries Act. – Overview United States Sustainable Fisheries Act – Table of Contents Office of Oil Spill Damage Assessment and Restoration Habitat Restoration: Overview Habitat Restoration: Supplementation Environmental Impact Statement Habitat Restoration: Essential Fish Habitat Protected Resources Division: Overview Protected Resources Division – Index of National Environmental Policy Act Analyses in Progress 					

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<ul style="list-style-type: none"> US Department of Commerce/National Oceanographic and Atmospheric Administration – National Marine Fisheries Service - Alaska Fisheries Science Center The Alaska Fisheries Science Center is the research branch of the National Oceanic and Atmospheric Administration's National Marine Fisheries Service responsible for fisheries research in the coastal oceans off Alaska and off parts of the west coast of the United States. This region of nearly 3 million square miles includes the North Pacific Ocean and the eastern Bering Sea which support some of the most important commercial fisheries in the world. These waters are also home to the largest marine mammal populations in the Nation. The mission of the Alaska Fisheries Science Center is to plan, develop, and manage scientific research programs which generate the best scientific data available for understanding, managing, and conserving the region's living marine resources and the environmental quality essential for their existence. The Alaska Fisheries Science Center conducts field and Laboratory research to help conserve and manage the region's living marine resources in compliance with the Magnuson-Stevens Fishery Conservation and Management Act of 1996, the Marine Mammal Protection Act of 1972, and the Endangered Species Act of 1973. Center scientists compile and analyze broad databases on fishery, oceanography, marine mammal, and environmental research. These data are used to develop policies and strategies for fisheries management within the U.S. Exclusive Economic Zone, monitor the health of the region's marine mammal populations, and assess the impacts of chemical contaminants and physical alterations on select organisms and marine habitats. The primary responsibilities of the Center are to provide scientific data and technical advice to: <ul style="list-style-type: none"> The Pacific Fishery Management Council The North Pacific Fishery Management Council The NMFS Alaska Regional Office U.S. representatives participating in international fishery and marine mammal negotiations The fishing industry and its constituents The Center also coordinates fisheries research with other Federal and state agencies, academic institutions, and foreign nations. Research programs at the Center are managed and conducted through the <ul style="list-style-type: none"> Resource Assessment and Conservation Engineering Division Resource Ecology and Fisheries Management Division National Marine Mammal Laboratory Auke Bay Laboratory Program objectives are carried out from Center laboratories and facilities in Alaska, Washington, and Oregon. 	X	X	X	X	X

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<ul style="list-style-type: none"> National Marine Mammal Laboratory - National Marine Fisheries Service - Alaska Fisheries Science Center The National Marine Mammal Laboratory (NMML) is responsible for conducting research on marine mammals important to the mission of the National Marine Fisheries Service (NMFS) and the National Oceanic & Atmospheric Administration (NOAA), with particular attention to issues related to marine mammals off the coasts of Oregon, Washington and Alaska. This work includes stock assessments, life history determinations, and status and trends. Information is provided to various U.S. governmental and international organizations to assist in developing rational and appropriate management regimes for marine resources under NOAA's jurisdiction. Research programs are carried out cooperatively with other Federal, state and private sector agencies. 	X	X	X	X	X
<ul style="list-style-type: none"> Resource Assessment and Conservation Engineering Division - National Marine Fisheries Service - Alaska Fisheries Science Center The Resource Assessment and Conservation Engineering (RACE) Division of the Alaska Fisheries Science Center conducts fishery surveys to measure the distribution and abundance of approximately 40 commercially important fish and crab stocks in the eastern Bering Sea, Gulf of Alaska, and the marine waters off California, Oregon, and Washington. Data derived from these surveys are analyzed by Center scientists and supplied to fishery management scientists and agencies and to the commercial fishing industry. RACE Division Programs are located at the Alaska Fisheries Science Center in Seattle, WA, the Kodiak Fisheries Research Center (Kodiak Lab) in Kodiak, AK, and the Hatfield Marine Science Center in Newport, OR (Fisheries Behavioral Ecology Program). The research surveys utilize a range of techniques--bottom and midwater trawls, longlines, traps, and fishery acoustics—and require a large inventory of fishing gears which are built and maintained by the Division's Net Loft. RACE scientists also use underwater video systems to observe fish and crab behavior during capture by fishing gear and laboratory experiments to measure potential for survival from capture stress. They also work with industry to test modifications of fishing equipment to reduce the take of nontargetted species (bycatch) such as halibut and king and snow crabs in the fisheries off Alaska. In 1980, RACE scientists discovered a large concentration of walleye pollock eggs in Shelikof Strait near Kodiak Island. The discovery led to a major pollock fishery there. The research has expanded into the Fisheries Oceanography Coordinated Investigation (FOCI) program, a joint project between NMFS and the Pacific Marine Environmental Laboratory (PMEL) to study the biological and physical processes that control the survival and growth of young pollock in the Gulf of Alaska and Bering Sea as they mature into the adult population. Fisheries Behavioral Ecology Program The Resource Assessment and Conservation Engineering (RACE) Fisheries Behavioral Ecology Program located at the Hatfield Marine Science Center in Newport, Oregon, conducts laboratory research aimed at understanding the relationship between marine fish behavioral responses and environmental factors and how these influence distribution, recruitment, and survival of economically important fish. Laboratory research also is conducted on the survival and recovery of marine fishes from stresses imposed during fishing activity (bycatch processes). The goal of the program is to improve the 	X	X	X	X	X

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<p>efficacy of predicting population abundance and fish survival by better understanding the subtle relationships that exist between fish and their environment.</p> <hr/> <ul style="list-style-type: none"> Resource Ecology and Fisheries Management Division - National Marine Fisheries Service - Alaska Fisheries Science Center The Alaska Fisheries Science Center's Resource Ecology and Fisheries Management (REFM) Division conducts research and data collection to support management of Northeast Pacific and Eastern Bering Sea fish and crab resources. Twenty-five groundfish and crab stock assessments are developed annually and used by the Pacific and North Pacific Fishery Management Councils to set catch quotas. Division scientists also evaluate how fish stocks and user groups might be affected by fishery management actions. The REFM Division is responsible for implementing the U.S. Fisheries Observer Program, which requires placement of observers on vessels and at processing plants. Observers collect catch data, take biological samples, make marine mammal observations, and record quantities of marine debris encountered. Biological samples are used by the Division's Age and Growth staff to construct age-length keys and critical growth parameters. REFM scientists use biological and oceanographic information coupled with numerical simulation techniques to study the interaction of fish populations, fisheries, and the environment. Information on the relationship between predators and prey developed by the Division's Resource Ecology and Ecosystem Modeling staff is critical to this endeavor. The REFM Division also provides economic information to NMFS, industry and other agencies to assist with such projects as evaluating the economic effects of the Exxon Valdez oil spill in Prince William Sound; developing guidelines for valuing commercial and recreational fisheries; and providing extracts for research projects. <hr/> <ul style="list-style-type: none"> Auke Bay Laboratory - National Marine Fisheries Service - Alaska Fisheries Science Center The Alaska Fisheries Science Center's Auke Bay Laboratory (ABL), located 12 miles north of Juneau, has housed Federal fisheries research activities in Alaska since 1960. Today the Auke Bay Laboratory consists of six research Programs. The Stock Identification and Groundfish Assessment Programs focus on research to solve fishery management problems dealing with international mixed-stock Pacific salmon fisheries and Alaska groundfish fisheries, with emphasis on the sablefish and rockfish fisheries in the Gulf of Alaska. The Marine Salmon Interactions and Ocean Carrying Capacity Programs deal with Pacific salmon research, particularly on the migration, growth, and survival of the young salmon after they enter the marine environment. Investigations of comparative biology, enhancement technology, and brood stock development for three stocks of chinook salmon are carried out at the ABL's Little Port Walter field station on Baranof Island. Habitat Investigations studies the effects of natural and human-caused environmental perturbations on key species and habitat. The Exxon Valdez damage assessment and restoration research activities are conducted in support of the Exxon Valdez Trustee Council and consist of a series of specific studies funded by settlement funds. Current projects at the facility Stock Identification: The ABL's Stock Identification Program conducts research activities which provide information required in regional, national, and international agreements and treaties dealing with the management of Pacific salmon. Legislation mandating this research includes the Pacific Salmon Treaty and the North Pacific Anadromous Stocks Act. Program activities are designed to determine population status, identify stocks to region or country of origin, determine population and stock utilization of ocean rearing areas, assess interceptions, and determine stock production. 	X	X	X	X	X

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<ul style="list-style-type: none"> Groundfish & Effects of Fishing Gear: The primary responsibility of the ABL Groundfish Assessment Program is to provide information needed by the NMFS and the North Pacific Fishery Management Council (NPFMC) to manage the Alaska groundfish resource, which is one of the most valuable fishery resources in the nation. A major task of the program is to use stock assessment information to determine annual groundfish quota recommendations used by the NPFMC to manage sablefish and rockfish fisheries in the U.S. Exclusive Economic Zone of the Gulf of Alaska. 					
<ul style="list-style-type: none"> Marine Salmon Interactions: The ABL's Marine Salmon Interactions research activities focus on: <ul style="list-style-type: none"> Genetic variation and (ESA)-related studies on local adaptation in isolated populations of steelhead Life history monitoring of pink salmon biology Effects of oil on the biology, homing, and survival of pink salmon Comparative biology, enhancement technology, and brood stock development for three stocks of chinook salmon Cooperative projects at Auke Creek with the University of Alaska Fairbanks and the Alaska Department of Fish and Game that provide long-term population monitoring of natural populations of seven species of salmonids and applied technology to help rebuild a depressed sockeye salmon run Studies on the growth, diet, distribution, behavior, and early marine survival of juvenile salmon and how these variables interact with marine environmental factors to determine year class strength in salmon populations Studies to learn how to reduce unwanted chinook salmon bycatch in certain fisheries. 	X	X	X	X	X
<ul style="list-style-type: none"> Ocean Carrying Capacity: ABL's Ocean Carrying Capacity Program continues the NMFS role in the stewardship of living marine resources of the North Pacific Ocean. Early concerns focused on measuring and assessing the effects of various high seas fisheries, such as the Japanese mothership salmon fishery and the high seas squid driftnet fisheries. Much of the expertise, biological methodology, and working relationships developed while addressing those issues can now be focused on the goal of gaining understanding of the effects of environmental and biological interactions on the productivity of the North Pacific. 	X	X	X	X	X
<ul style="list-style-type: none"> Habitat Investigations: The Auke Bay Laboratory's Habitat Investigations Program provides essential information needed for the conservation of living marine resources during developmental activities associated with fisheries, logging, oil production, fish processing and municipal wastes, mining, and urbanization. The fundamental goal of the program is to provide information both for the rational development of Alaska's natural resources and for management of essential fish habitat while avoiding or minimizing habitat degradation. 					
<ul style="list-style-type: none"> Kodiak Laboratory - National Marine Fisheries Service - Alaska Fisheries Science Center <ul style="list-style-type: none"> The Resource and Assessment Conservation Engineering (RACE) Division's Shellfish Assessment Program located at the new Alaska Fisheries Science Center's Kodiak Laboratory in Alaska and at the Sand Point facility in Seattle, Washington, conducts and reports results of surveys designed to establish time series estimates of the distribution and abundance of king and Tanner crabs in the eastern Bering Sea and of other commercial shellfish resources in Alaska. Program members investigate biological processes and interactions with the environment to estimate growth, mortality, and recruitment of crabs to improve the precision and accuracy of forecasting stock dynamics, and they identify and track potential pathogens in the dominant shellfish and groundfish stocks in the north Pacific Ocean and Bering Sea. 					

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<ul style="list-style-type: none"> In addition to the Bering Sea survey, specific studies conducted by the Kodiak Laboratory include: A study of Tanner crab reproduction using submarines, Remote Operated Vehicles (ROV), benthic sleds and scuba, partially funded by the Alaska Department of Fish and Game and West Coast National Undersea Research Program (NURP). Scuba studies of the life history and status of red king crab and Tanner crab in Women's Bay off Kodiak Island. The study of long-term changes in the Gulf of Alaska marine ecosystem as part of APEX. Sea-water laboratory studies on hatch timing, cultivation methods, and survival of red king crab larvae. In the Fall of 1999, the Alaska Fisheries Science Center RACE division established a groundfish laboratory at the Kodiak Fisheries Research Center. Currently, two research fisheries biologists are working on projects related to the management of commercial fisheries in the Gulf of Alaska and the Aleutian Islands. These projects include histological analysis of the reproductive maturity in some rockfish and flatfish species, and testing archival tag placement on Atka Mackerel. See attached web site information for: Alaska Fisheries Science Center – Overview Alaska Fisheries Science Center – Research Activities, 1st Quarter, 2001 Alaska Fisheries Science Center – Research Activities, 1st Quarter, 2000 Alaska Fisheries Science Center – Research Activities, 2nd Quarter, 2000 Alaska Fisheries Science Center – Research Activities, 3rd Quarter, 2000 Alaska Fisheries Science Center – Research Activities, 4th Quarter, 2000 Alaska Fisheries Science Center – Research Activities, 1st Quarter, 1999 Alaska Fisheries Science Center – Research Activities, 2nd Quarter, 1999 Alaska Fisheries Science Center – Research Activities, 3rd Quarter, 1999 Alaska Fisheries Science Center – Research Activities, 4th Quarter, 1999 National Marine Mammal Laboratory – Overview Resource Assessment & Conservation Engineering – RACE Research Programs Resource Assessment & Conservation Engineering – Recruitment Processes Program Resource Assessment & Conservation Engineering – Shellfish Assessment Program Resource Assessment & Conservation Engineering – Groundfish Assessment Program Resource Assessment & Conservation Engineering – Recent Groundfish Assessment Activities Resource Assessment & Conservation Engineering – Midwater Assessment and Conservation Engineering Program Resource Assessment & Conservation Engineering – Midwater Assessment and Conservation Engineering Program Research Activities Resource Assessment & Conservation Engineering – Fisheries Behavioral Ecology Program: Overview Resource Assessment & Conservation Engineering – Fisheries Behavioral Ecology Program: Research Programs 					

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• Resource Ecology and Fisheries Management – Resource Ecology and Ecosystem Modeling					
• Resource Ecology and Fisheries Management – AFSC Age and Growth Lab					
• Resource Ecology and Fisheries Management – Assessment related documents					
• Auke Bay Laboratory – Ocean Carrying Capacity: Mission					
• Auke Bay Laboratory – Marine Salmon Interaction					
• Auke Bay Laboratory – Rockfish Research					
• Auke Bay Laboratory – Effects of Fishing Gear on Essential Fish Habitat					
• Auke Bay Laboratory – Sablefish Research					
• Auke Bay Laboratory – Groundfish Assessment					
• Auke Bay Laboratory – Stock Identification					

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<ul style="list-style-type: none"> North Pacific Fishery Management Council The NPFMC has an ecosystem-based management approach for managing North Pacific groundfish that involves public participation, reliance on scientific research and advice, conservative catch quotas, comprehensive monitoring and enforcement, bycatch controls, gear restrictions, temporal and spatial distribution of fisheries, habit conservation in areas and other biological and socioeconomic considerations. The North Pacific Fishery Management Council (NPFMC) is one of eight regional councils established by the Magnuson Fishery Conservation and Management Act in 1976 (which has been renamed the Magnuson-Stevens Fishery Conservation and Management Act) to oversee management of the nation's fisheries. With jurisdiction over the 900,000 square mile Exclusive Economic Zone (EEZ) off Alaska, the Council has primary responsibility for groundfish management in the Gulf of Alaska (GOA) and Bering Sea and Aleutian Islands (BSAI), including cod, pollock, flatfish, mackerel, sablefish, and rockfish species harvested mainly by trawlers, hook and line longliners and pot fishermen. The Council also makes allocative and limited entry decisions for halibut, though the U.S. - Canada International Pacific Halibut Commission (IPHC) is responsible for conservation of halibut. Other large Alaska fisheries such as salmon, crab and herring are managed primarily by the State of Alaska. The Council has eleven voting members, six from Alaska, three from Washington, one from Oregon, and a federal representative, the Alaska Regional Director of NMFS. The non-federal voting members represent state fisheries agencies, industry, fishing communities, and academia. The Council also has four non-voting members representing the U.S. Coast Guard, U.S. Fish and Wildlife Service, the Pacific States Marine Fisheries Commission, and the U.S. Department of State. The Council meets five to six times each year, four times in communities around Alaska, and once in Washington or Oregon. The Council's staff of ten resides in Anchorage, Alaska. The Council receives advice each meeting from its twenty-two member Advisory Panel (AP) representing user groups, environmentalists and consumer groups, and from its twelve-member Scientific and Statistical Committee (SSC) of highly respected scientists who review all information brought to the Council. 	X	X	X	X	X
<ul style="list-style-type: none"> Ecosystem Committee - North Pacific Fishery Management Council In 1996, the Council established an Ecosystem Committee to discuss possible approaches to incorporating ecosystem concerns into the fishery management process. The committee has held workshops on ecosystem research, held several meetings to discuss essential fish habitat, and has hosted numerous informal discussions on ecosystem-based management and habitat concerns. A major role of this committee has been to provide the Council and stakeholders with information on ecosystem-based management in the North Pacific. The committee identified primary principles and elements of ecosystem management from scientific literature to serve as draft policy for ecosystem-based management of North Pacific fisheries. The committee also provides feedback to scientists regarding research needs. 	X	X	X	X	X

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<ul style="list-style-type: none"> Essential Fish Habitat - North Pacific Fishery Management Council The Magnuson-Stevens Act mandates that any FMP must include a provision to describe and identify essential fish habitat (EFH) for the fishery, minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat. Essential Fish habitat has been broadly defined by the Act to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." 	X	X	X	X	X
<ul style="list-style-type: none"> Science and Statistical Committee - North Pacific Fishery Management Council The Scientific and Statistical Committee (SSC) is composed of leading scientists in biology, economics, statistics, and social science. The SSC advises the Council on scientific and other technical matters. The SSC has 12 members, all of which serve one-year terms (January 1 through December 31). These members may be reappointed or replaced by the Council annually at their December Council meeting. See attached web site information for: <ul style="list-style-type: none"> Ecosystem Based Management Essential Fish Habitat Scientific and Statistical Committee North Pacific Fishery Management Council Groundfish Plan Team for BSAI and GOA Integrating Ecosystem Considerations into Groundfish Fisheries Management off Alaska, USA 					

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<ul style="list-style-type: none"> Department of Interior, US Fish & Wildlife Service The mission of the U.S. Fish and Wildlife Service is to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people. At the same time, Service also carries out its legal mandates established by such laws as the Migratory Bird Treaty Act, National Wildlife Refuge System Administrative Act, Endangered Species Act, Marine Mammal Protection Act, and Fish and Wildlife Coordination Act. To successfully carry out its mission and mandates in Alaska, the Service depends on effective partnerships with other Federal, State, and local agencies, and with the private sector and Alaska Native organizations. As the northernmost of seven geographical regions nationwide, the Alaska Region of the Service takes on a range of wildlife management challenges unparalleled anywhere else in the world, including: <ul style="list-style-type: none"> An enormous variety of geographic features and climatic conditions. Immense areas of inland and coastal wildlife management habitat, with thriving wildlife populations. Complex and extensive international wildlife management issues. Extraordinary dependence on fish and wildlife by its people for subsistence, commerce, and quality of life. Headquartered in Anchorage, the Alaska Region employs 450-500 people, augmented by hundreds of others who work part-time or as volunteers during field seasons. These highly dedicated and professional individuals perform a wide range of jobs in the biological services and a variety of support services, working out of offices in some 16 communities statewide. The senior official of the U.S. Fish and Wildlife Service, Alaska Region, is the Regional Director. Working with a staff of a Deputy Regional Director, Assistant Regional Directors, and a variety of "teams" including those representing each of Alaska's ten ecosystems, the Regional Director reports directly to the national Director of the U.S. Fish & Wildlife Service in Washington, D.C., who in turn reports to the Secretary of the Interior. Overall responsibilities are broken down into programs, which are administered by the Assistant Regional Directors. 	X	X	X	X	X
<ul style="list-style-type: none"> Ecosystem Management - Department of Interior, US Fish & Wildlife Service The Fish and Wildlife Service takes an ecosystem management approach to its stewardship of Alaska's fish and wildlife resources, recognizing two key factors: (1) The various components of an environment are interrelated, and (2) success in fish and wildlife management issues begins by involving a broad spectrum of publics. The goal of ecosystem management is to conserve biological diversity through perpetuation of dynamic, healthy ecosystems. To this end, the Alaska Region of the Service is working to: (1) Identify and meet fish and wildlife needs in the context of the entire environmental and socioeconomic landscape in which they occur, (2) increase cross-program collaboration within the agency, and (3) communicate, coordinate, and collaborate more frequently, more consistently, and more effectively with our partners, affected stakeholders, and the public. To reach this goal, the Alaska Region of the Service has identified ten ecosystems in Alaska. Each of these ecosystems is a dynamic and interrelating complex of plant and animal communities and their associated non-living environment. These ecosystems are managed by interdisciplinary teams of 	X	X	X	X	X

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specialists whose natural resource management strategy is to protect or restore the function, structure, and species composition of the ecosystem, recognizing that all components are interrelated. For administrative purposes, the ecosystems are organized into two ecoregions, each supervised by a Geographic Assistant Regional Director (GARD).	X	X	X	X	X
<ul style="list-style-type: none"> Ecological Services - Department of Interior, US Fish & Wildlife Service Ecological Services in Alaska is composed of diverse programs with varied responsibilities, mandates and complex issues. Programs within Ecological Services are Endangered Species, Environmental Contaminants, Habitat Conservation and Marine Mammals Management. Environmental Contaminants Program To protect, improve and restore the quality of fish, wildlife and habitat resources through the identification, prevention and correction of environmental contaminant problems in Alaska. Endangered Species Program To prevent the decline of species and the ecosystems upon which they depend, and to achieve the recovery of threatened and endangered species. Coastal Program The Region 7 Coastal Program works with state and federal agencies, Boroughs and municipalities, Alaska Natives, non-governmental organizations and private landowners to voluntarily conserve healthy coastal ecosystems for the benefit of fish, wildlife and people. It does this through cooperative partnerships that identify, restore, and protect habitat in priority coastal areas. Click here to view application guidelines for our Cook Inlet Area Conservation Grants Program. Habitat Conservation The Habitat Conservation program coordinates activities under provisions of the Clean Water Act, National Environmental Policy Act, Fish and Wildlife Coordination Act, and other legislation. Within this program, three Ecological Services Field Offices, ensure that fish, wildlife and their habitats receive full consideration under applicable laws during planning, permitting and construction of land and water-related projects -- from mining to timber harvest, and oil and gas exploration and development. Associated with this program is the National Wetlands Inventory (NWI) responsible for mapping and classification of Alaska's wetlands 	X	X	X	X	X
<ul style="list-style-type: none"> Fisheries Resources - Department of Interior, US Fish & Wildlife Service The conservation of natural diversity is necessary as environmental changes require that the diverse array of evolved genetic resources be available to allow for successful adaptation to changed conditions. Conserving natural diversity requires maintaining healthy populations for all native species and their genetic variability. A scientific-based fishery program is essential for conserving the natural diversity of aquatic ecosystems and associated habitat. The Alaska Region Fisheries Program's approach is multidisciplinary, incorporating population status and trend information, habitat requirements, 					

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genetics, restoration and enhancement, and education and outreach. While our program efforts are an important component, it is only through our active partnerships among resource agencies and the public that we can achieve our goal of conserving natural diversity in Alaska's aquatic ecosystems.					
<ul style="list-style-type: none"> The Alaska Region Fishery Program is organized into four Fishery Resources Offices , a Fish Genetics Laboratory, and the Regional Office. The Program also provides for a dedicated fishery biologist at two National Wildlife Refuges. Each office has primary responsibility for working on federal lands and fisheries issues in the Region's ten ecosystems. Programs and projects within the Region's Refuges and ecosystems are designed to meet fishery management needs and complement state, federal, and local agency programs. Below are specific responsibilities of the Alaska Region Fisheries Program offices. 					
<ul style="list-style-type: none"> The Alaska Fisheries Regional Office duties: Coordinates nonindigenous species introduction protection efforts Represents the Service on the North Pacific Fisheries Management Council Participates in U.S./Canada Pacific Salmon Treaty Act negotiations for Yukon River issues Coordinates regional aquaculture activities Represents Service on the Fish Technology Center advisory committee Provides biometric support to the Fisheries Program staff 	X				X
<ul style="list-style-type: none"> Fish Genetics Laboratory Provides Service leadership for conservation of genetic resources, particularly Pacific salmon stocks Develops and implements genetic stock identification studies to delineate stocks for use in fisheries management and allocation decisions. Evaluates genetic impacts resulting from stock introductions, exploitation, and other activities Monitors stocks for genetic change Coordinates on genetic issues within and the Service Conducts outreach activities that promote the importance of maintaining genetic diversity 	X	X	X	X	X
<ul style="list-style-type: none"> Kenai Fishery Resources Office Responsible for fisheries issues in the Southern Ecoregion which includes the Southcentral Alaska, Yukon-Kuskokwim Delta, and North Pacific/Gulf of Alaska Ecosystems Provides Fisheries Management Assistance to Kenai, Kodiak, Alaska Maritime and Yukon Delta National Wildlife Refuges Represents the Service on the Cook Inlet and Prince William Sound Regional Aquaculture Planning Team 	X	X	X	X	X
<ul style="list-style-type: none"> King Salmon Fishery Resources Office Responsible for fisheries issues in the Ecoregion which includes the Bristol Bay/Kodiak and Bering Sea Ecosystems Provides Fisheries Management Assistance to Alaska Peninsula, Becharof, Togiak and Izembek National Wildlife Refuges Represents the Service on the Bristol Bay and Area M Regional Aquaculture Planning Teams 					

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<ul style="list-style-type: none"> Fairbanks Fishery Resources Office Supports Canada/U.S. Pacific Salmon Treaty negotiations on the Joint Technical Committee Responsible for fisheries issues in the Northern Ecoregion which includes the Arctic, Northwest Alaska, Chukchi Sea and Interior Alaska Ecosystems Provides Fisheries Management Assistance to Arctic, Kanuti, Innoko, Koyukuk/Nowitna, Selawik, Tetlin and Yukon Flats National Wildlife Refuges Represents the Service on the Yukon River Regional Aquaculture Planning Team 	X	X	X	X	X
<ul style="list-style-type: none"> Juneau Fishery Resources Office Conducts habitat protection and restoration activities Responsible for fisheries issues in the Southeast Alaska Ecosystem Represents the Service on fisheries issues pertaining to development and planning on the Tongas National Forest. 	X	X	X	X	X
<ul style="list-style-type: none"> Togiak National Wildlife Refuge Fishery Biologist Provides expertise on fishery issues refuge-wide Conducts fishery investigations to provide data used in resource management Coordinates the King Salmon Fisheries Resource Office's activities on the refuge 			X	X	
<ul style="list-style-type: none"> Kodiak National Wildlife Refuge Fishery Biologist Provides expertise on refuge fishery issues Conducts fishery investigations to provide data used in resource management Coordinates the Kenai Fisheries Resource Office's activities on the refuge 					
<ul style="list-style-type: none"> Division of Realty The Division of Realty administers a wide variety of programs in Alaska. The Division's primary responsibilities include: <ul style="list-style-type: none"> acquiring and exchanging land, administering easements, leases and rights-of-way protecting archeological and cultural sites, and establishing water rights for refuge purposes. The Division is divided into four branches, each responsible for several functions. 	X	X	X	X	X

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<ul style="list-style-type: none"> • Water Resources • The Water Resources Branch documents the occurrence, quantity, distribution and movement of water within the Alaska refuges. Types of data collected include stream discharge, lake elevation surveys, lake bathymetry, and water well logs. These data are used to quantify and file for instream water rights with the State of Alaska to protect fish and wildlife and their habitats, and to provide an adequate water supply for refuge campgrounds, administrative offices, and facilities. The Branch also researches title navigability issues. Additionally, Branch staff provide technical assistance to other units of the Service as requested. 					
<ul style="list-style-type: none"> • Marine Mammals Management Office • The Marine Mammal Protection Act of 1972 gave the Department of Interior management responsibility for polar bears, walrus, sea otters, manatees, and dugongs. The U.S. Fish and Wildlife Service, Region 7, Alaska, Marine Mammals Management Office is responsible for Management of the three Alaska species: polar bears, sea otters, and Pacific walrus. Management requires international coordination between the United States, Russia, and Canada, as well as a cooperative working relationship with Alaska Natives. Interactions with the domestic timber, fishing, and oil and gas industries are underway to • conserve these species while allowing the wise use of our natural resources. • See attached web site information for: • Alaska Region – Office Directory Listing • Ecological Services – Overview • Ecological Services – Endangered Species • Ecological Services – Environmental Contaminants • Ecological Services – Habitat Conservation • Ecological Services – Coastal Program • Ecological Services – Marine Mammal Management • Fisheries Resource – Overview • Fisheries Resource – Fish Genetics Lab • Fisheries Resource – Kenai Fishery Resources Office • Fisheries Resource – King Salmon Fishery Resources Office • Fisheries Resource – Fairbanks Fishery Resources Office • National Wildlife Refuge – Togiak • National Wildlife Refuge – Kodiak • Division of Realty – Water Resource • Marine Mammals Management 					

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<ul style="list-style-type: none"> International Pacific Halibut Commission (IPHC) The International Pacific Halibut Commission, originally called the International Fisheries Commission, was established in 1923 by the governments of Canada and the United States of America. Its mandate is to study and preserve the stocks of Pacific halibut (<i>Hippoglossus stenolepis</i>) within the territorial waters of both nations. See attached web site information for: <ul style="list-style-type: none"> IPHC Home Page Current Research Draft Paper – Decadal Changes in growth and recruitment of Pacific halibut IPHC – 2000 Survey Data 	X		X	X	X

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<ul style="list-style-type: none"> • North Pacific Anadromous Fish Commission (NPAFC) • The North Pacific Anadromous Fish Commission (NPAFC) was established under the Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean, signed on February 11, 1992 and entered into force on February 16, 1993. The involved countries are Canada, Japan, the Russian Federation, and the United States. It covers the waters of the North Pacific Ocean and its adjacent seas, north of 33 degrees North Latitude beyond 200-miles zones of the coastal States. The Commission's objective is to promote the conservation of anadromous stocks in the Convention Area. • Conservation measures under the Convention • Prohibition of directed fishing for anadromous fish in the Convention Area. • Minimization to the maximum extent of the incidental taking of anadromous fish • Prohibition of the retention on board a fishing vessel of anadromous fish taken as an incidental catch during fishing for non-anadromous fish. • Science • The Convention authorizes fishing for anadromous fish in the Convention Area for scientific research purposes under national and joint research programs approved by the Commission. It is understood that such taking of anadromous fish for scientific research purposes must be consistent with the needs of a program and with the provisions of the Convention and should be reported to the Commission. The Parties to the Convention cooperate in the conduct of scientific research under the NPAFC Science Plan in the Convention Area, which may include, as appropriate, research on other ecologically related species. The Parties also cooperate in collecting, reporting and exchanging biostatistical information, fisheries data, including catch and fishing effort statistics, biological samples and other relevant data pertinent to the purposes of the Convention. The Parties upon the Commission's request provide catch, enhancement and other technical information and materials pertaining to areas adjacent to the Convention Area from which anadromous stocks migrate into the Convention Area. The Convention provides for the development of cooperative programs, including observer programs, to collect fishing information in the Convention Area for the purpose of scientific research. The Convention also provides for cooperation in scientific exchanges such as seminars, workshops, and exchanges of scientific personnel. • Enforcement • All necessary measures shall be taken by each Party to ensure its nationals and fishing vessels flying its flag comply with the provisions of the Convention. Each Party has the authority to board, inspect and detain fishing vessels of the other Parties found operating in violation of the Convention. Article V of the Convention gives the details of the enforcement mechanism and provides that only the authorities of the Party to which the violating person or vessel belongs may try the offense and impose penalties. It is also stipulated that imposed penalties shall be commensurate with the serious nature of the infractions. • The Parties cooperate in exchange of information on any violation of the provisions of the Convention and on enforcement action. The Parties exchange with their enforcement plans. • See attached web site information for: • Publications • Science Plan, 2001 - 2005 	X		X	X	X

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<ul style="list-style-type: none"> US Environmental Protection Agency 	X	X	X		
<ul style="list-style-type: none"> Office of Oceans, Wetlands and Watersheds - US Environmental Protection Agency Water quality standards (WQS) are rules or regulations that specify the desired water quality to achieve or maintain for surface waters (lakes, streams, rivers, wetlands, and other surface waters), protect the existing water quality from degradation, and govern how point and nonpoint discharges of pollutants are permitted in order to protect water quality. The United States Federal Clean Water Act (CWA) requires that states and authorized tribes adopt WQS to protect fish and other aquatic life (fishable goal) as well as humans who use the water for recreation, drink surface water, and eat aquatic life caught in surface waters (swimmable goal). Water quality standards consist of three required components: Designated uses are desired uses of the water specific to each waterbody. Designated uses can be based on how the water has actually been used since November 1975 (existing uses) or the designation can be based on a goal (goal use) that will be achieved in the future. Criteria is necessary to protect the uses. Water quality criteria describe the conditions necessary to support the designated uses. Criteria can be numeric limits for individual pollutants or narrative descriptions of desired conditions. The Antidegradation Policy is a policy to prevent or limit degradation of water quality based on three tiers of protection. The policy establishes procedures to follow when considering regulating an activity which might affect a particular waterbody. A fourth optional component of WQS includes general policies which give the state or tribe the flexibility to adjust designated uses or criteria on a site-specific basis (e.g., mixing zone policy, variance policy, site-specific criteria procedures). Water quality standards play an important role in protecting the quality of the United States' waters. The U.S. Environmental Protection Agency provides guidance, technical assistance, and oversight to ensure that federal requirements are satisfied. Further information on water quality standards is available by clicking on the topics listed below. 					
<ul style="list-style-type: none"> Oceans and Coastal Protections A watershed is a geographic area in which all sources of water, including lakes, rivers, estuaries, wetlands, and streams, as well as ground water, drain to a common surface water body. Because all watersheds are defined by natural hydrology and ultimately drain to coastal waters, they are good focal points for managing coastal resources. EPA's Oceans and Coastal Protection Division works with other EPA Offices, other federal agencies, state and local governments, non-profit organizations, academic institutions, and many other partners to promote the protection and management of coastal resources on a watershed basis. 				X	X
<ul style="list-style-type: none"> Wetlands Wetlands are among the most productive ecosystems in the world, comparable to rain forests and coral reefs. An immense variety of species of microbes, plants, insects, amphibians, reptiles, birds, fish, and mammals can be part of a wetland ecosystem. Physical and chemical features such as climate, landscape shape (topology), geology, and the movement and abundance of water help to determine the plants and animals that inhabit each wetland. The complex, dynamic relationships among the organisms inhabiting the wetland environment are referred to as food webs. This is why wetlands in Texas, North Carolina, and Alaska differ from one another. 				X	X

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<ul style="list-style-type: none"> Wetlands can be thought of as "biological supermarkets." They provide great volumes of food that attract many animal species. These animals use wetlands for part of or all of their life-cycle. Dead plant leaves and stems break down in the water to form small particles of organic material called "detritus." This enriched material feeds many small aquatic insects, shellfish, and small fish that are food for larger predatory fish, reptiles, amphibians, birds, and mammals. The functions of a wetland and the values of these functions to human society depend on a complex set of relationships between the wetland and the other ecosystems in the watershed. A watershed is a geographic area in which water, sediments, and dissolved materials drain from higher elevations to a common low-lying outlet or basin a point on a larger stream, lake, underlying aquifer, or estuary. Wetlands play an integral role in the ecology of the watershed. The combination of shallow water, high levels of nutrients, and primary productivity is ideal for the development of organisms that form the base of the food web and feed many species of fish, amphibians, shellfish, and insects. Many species of birds and mammals rely on wetlands for food, water, and shelter, especially during migration and breeding. Wetlands' microbes, plants, and wildlife are part of global cycles for water, nitrogen, and sulfur. Furthermore, scientists are beginning to realize that atmospheric maintenance may be an additional wetlands function. Wetlands store carbon within their plant communities and soil instead of releasing it to the atmosphere as carbon dioxide. Thus wetlands help to moderate global climate conditions. 			X	X	
<ul style="list-style-type: none"> Watershed Protection A Watershed Protection Approach is a strategy for effectively protecting and restoring aquatic ecosystems and protecting human health. This strategy has as its premise that many water quality and ecosystem problems are best solved at the watershed level rather than at the individual waterbody or discharger level. Major features of a Watershed Protection Approach are: targeting priority problems, promoting a high level of stakeholder involvement, integrated solutions that make use of the expertise and authority of multiple agencies, and measuring success through monitoring and other data gathering. 			X	X	
<ul style="list-style-type: none"> Total Maximum Daily Load A TMDL, or Total Maximum Daily Load, is a tool for implementing water quality standards and is based on the relationship between pollution sources and in-stream water quality conditions. The TMDL establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby provides the basis to establish water quality-based controls. These controls should provide the pollution reduction necessary for a waterbody to meet water quality standards. 		X	X	X	
<ul style="list-style-type: none"> Ecoregional Nutrient Criteria The United States Environmental Protection Agency (EPA) is publishing recommended water quality criteria to reduce problems associated with excess nutrients in waterbodies in specific areas of the country. EPA will work with states and tribes to adopt regional-specific and locally appropriate water quality criteria for nutrients in lakes, reservoirs, rivers, streams, and wetlands in seventeen ecoregions. States and tribes are expected to adopt or revise ecoregional nutrient criteria that are published in 2000 and 2001 into water quality standards by 2004. This is the first time EPA has issued regional specific nutrient criteria. 	X	X	X	X	X

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<ul style="list-style-type: none"> Office of Ecosystem and Communities - US Environmental Protection Agency This office works to restore and protect the environment for naturally functioning ecosystems and healthy human communities. 			X	X	
<ul style="list-style-type: none"> Community Based Environmental Protection Community-Based Environmental Protection (CBEP) integrates environmental management with human needs, considers long-term ecosystem health and highlights the positive correlations between economic prosperity and environmental well-being. 					
<ul style="list-style-type: none"> Pesticides Unit The Pesticides Unit is concerned with the ways in which pesticides are used, and the economic, ecologic, and human health consequences of these uses. The major legislation under which the Unit acts is the Federal Insecticide, Fungicide and Rodenticide Act. The Unit also has special responsibilities under the Endangered Species Act and the Food Quality Protection Act of 1996. The Pesticides Unit develops and implements programs in Region 10, including outreach, education, and enforcement, to protect human health and the environment from unreasonable adverse effects of pesticide use. 	X	X	X	X	X
<ul style="list-style-type: none"> Northwest Biological Assessment Workgroup - US Environmental Protection Agency Aquatic biological assessment (bioassessment) is the use of resident biota to determine the condition of aquatic resources. The information in this home page concentrates primarily on the use of macroinvertebrate, periphyton and fish assemblages in rivers and streams, although many of the principles apply to wetland and lake ecosystems as well. 		X	X	X	
<ul style="list-style-type: none"> The National Environmental Policy Act of 1969 - US Environmental Protection Agency An Act to establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes. The purposes of this Act are: To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality. See attached web site information for: <ul style="list-style-type: none"> Alaska Environment Aquatic Resources Office of Wetlands, Oceans and Watersheds – Overview Office of Wetlands, Oceans and Watersheds – Wetlands & Watersheds: Overview 					

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<ul style="list-style-type: none"> • Office of Wetlands, Oceans and Watersheds – Wetland Laws • Office of Wetlands, Oceans and Watersheds – Wetland Water Quality and 401 Certification • Office of Wetlands, Oceans and Watersheds – Marine Pollution Control Programs • Office of Wetlands, Oceans and Watersheds –National Estuary Program • Office of Wetlands, Oceans and Watersheds –Air Pollution and Water Quality • Office of Wetlands, Oceans and Watersheds – Marine Debris • Office of Wetlands, Oceans and Watersheds - Ecoregional Nutrient Criteria • Alaska Environmental Performance Partnership Agreement w/ Alaska Department of Environmental Conservation and US EPA • Office of Ecosystem and Communities Pamphlet • Overview of TMDL Process • Water Quality Standards, Clean Water Act 303(c) • Northwest Biological Assessment Workgroup – Overview • Integrating the Clean Water Act and the Endangered Species Act, Between EPA, NMFS, and FWS • Aquatic Habitat Indicators and their Application to Water Quality Objectives within the Clean Water Act 					

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• Army Corp of Engineers <ul style="list-style-type: none"> The United States Army Corps of Engineers (USACE) is made up of approximately 34,600 civilian and 650 military men and women. Our military and civilian engineers, scientists and other specialists work hand in hand as leaders in engineering and environmental matters. Our diverse workforce of biologists, engineers, geologists, hydrologists, natural resource managers and other professionals meets the demands of changing times and requirements as a vital part of America's Army. Our mission is to provide quality, responsive engineering services to the nation including: Planning, designing, building and operating water resources and other civil works projects (Navigation, Flood Control, Environmental Protection, Disaster Response, etc.) Designing and managing the construction of military facilities for the Army and Air Force. (Military Construction) Providing design and construction management support for other Defense and federal agencies. (Interagency and International Services) 			X	X	
<hr/> <ul style="list-style-type: none"> The Civil Works Environmental mission is to ensure that all US Army Corps of Engineers projects, facilities, and associated lands meet environmental standards. The environmental program has four functions: compliance, restoration, prevention, and conservation. Compliance: All projects must meet federal, state, local and applicable host-nation environmental requirements. Restoration: Restoration includes all activities necessary to clean up contaminated areas at project sites. The US Army Corps of Engineers serves the nation through superior management, design and execution of the full range of cleanup and protection activities as in the Formerly Utilized Sites Remedial Action Program (FUSRAP). The Corps does reimbursable work for other agencies such as cleaning up hazardous, toxic and radioactive wastes (HTRW) for Environmental Protection Agency and the Department of Energy. Prevention: Prevention focuses on eliminating pollution to the greatest extent possible. This includes reducing hazardous materials use and hazardous waste generation. Conservation: Conservation includes two different types of resource management at project sites: conservation and preservation. Conservation focuses on responsibly managing Army lands to ensure long-term natural resource productivity. Preservation focuses on resource protection in stewardship of natural and cultural resources. The Corps also has an environmental program tied to its military mission. Included in that environmental program are: Formerly Used Defense Sites (FUDS) - Cleaning up environmental contamination at former DoD properties; Brownfields - A Corps and EPA partnership helping communities clean up and reuse abandoned, idle or under-used industrial and commercial facilities; Superfund - The Corps helps EPA clean up uncontrolled or abandoned hazardous waste sites; Formerly Utilized Sites Remedial Action Program (FUSRAP) -- Cleaning up contaminated areas resulting from early atomic energy research. 			X	X	
			X	X	

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<ul style="list-style-type: none"> Environmental Division – Army Corp of Engineers The US Army Corps of Engineers cleans up sites contaminated with hazardous waste, radioactive waste, or ordnance; complies with federal, state, and local environmental laws and regulations; strives to minimize our use of hazardous materials; and conserves our natural and cultural resources. The Corps serves the nation through superior management, design and execution of a full range of cleanup and protection activities. 			X	X	
<ul style="list-style-type: none"> Institute For Water Resources The U.S. Army Corps of Engineers Institute for Water Resources was formed to provide forward-looking analysis and research in developing planning methodologies to aid Civil Works program. Since its beginnings in 1969, the Institute was envisioned to provide the the Corps with long-range planning capabilities to assist in improving the civil works planning process. Thirty-two years later, the Institute continues to provide the Civil Works program with a variety of products to enhance the Corps of Engineers water resources development planning. In July 2000, the Corps Hydrologic Engineering Center at Davis, CA and the Corps Navigation Data Center in Alexandria VA were added to the Institute. The Hydrologic Engineering Center is a world-renowned research and development, training, and consulting organization in the area of hydrologic engineering and hydrologic models. The Navigation Data Center is the Corps data collection organization for waterborne commerce, vessel characteristics, port facilities, dredging information, and information on navigation locks. 			X	X	
<ul style="list-style-type: none"> Alaska District The Alaska District's mission is to design and construct military projects for the Army, Air Force, civil works and water resources development projects for coastal communities. The Corps also conducts military Real Estate transactions, is responsible for Emergency Operations involving national emergency and natural disaster, and regulates development in navigable waters, and placement of fill material in waters and wetlands. See attached web site information for: Environmental Division - Programs Institute For Water Resources – Overview Institute For Water Resources – Decision Methodologies Division Institute For Water Resources – Decision Methodologies Division – Environment Brochure Alaska District – Current Projects 					

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• Pacific Salmon Commission <ul style="list-style-type: none"> Management of Pacific salmon has long been a matter of common concern to the United States and Canada. In 1985, after many years of negotiation, the Pacific Salmon Treaty was signed, setting long-term goals for the benefit of the salmon and the two countries. The Pacific Salmon Commission is the body formed by the governments of Canada and the United States to implement the Pacific Salmon Treaty. The Commission itself does not regulate the salmon fisheries but provides regulatory advice and recommendations to the two countries. It has responsibility for all salmon originating in the waters of one country which are subject to interception by the other, affect management of the other country's salmon or affect biologically the stocks of the other country. In addition, the Pacific Salmon Commission is charged with taking into account the conservation of steelhead trout while fulfilling its other functions. The fundamental role of the Pacific Salmon Commission is two-fold: <ul style="list-style-type: none"> first, to conserve the Pacific Salmon in order to achieve optimum production, second, to divide the harvests so that each country reaps the benefits of its investment in salmon management. The Pacific Salmon Commission has a variety of tools at hand to achieve its mandate. The commission may recommend that the countries implement: <ul style="list-style-type: none"> Harvest limitations, Time and area closures, Gear restrictions, or other measures to control harvests. In addition, the Commission may recommend use of enhancement techniques to strengthen weak runs, mitigate for damage done by logging, mining or dam-building, or for other purposes. See attached web site information for: <ul style="list-style-type: none"> Biology of salmon Enhancement of salmon Publications 	X		X	X	X

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• Pacific States Marine Fisheries Commission <ul style="list-style-type: none"> Authorized by Congress in 1947, the Pacific States Marine Fisheries Commission (PSMFC) is one of three interstate commissions dedicated to resolving fishery issues. Representing California, Oregon, Washington, Idaho, and Alaska, the PSMFC does not have regulatory or management authority; rather it serves as a forum for discussion, works for coastwide consensus to state and federal authorities. PSMFC addresses issues that fall outside state or regional management council jurisdiction. The goal is to promote and support policies and actions directed at the conservation, development and management of fishery resources of mutual concern to member states through a coordinated regional approach to research, monitoring and utilization. The Commission sponsors a number of projects. The Regional Mark Information System is a salmon tag marking data base servicing the Pacific Northwest. The Passive Integrated Transponder Tag Information System operates and maintains the Columbia Basin-wide database for PIT Tagged fish and to operate and maintain the established interrogation systems. The data collected by this system is accessible to all entities. StreamNet is a cooperative venture of the Pacific Northwest's fish and wildlife agencies and tribes and is administered by the Pacific States Marine Fisheries Commission. We provide data and data services in support of the region's Fish and Wildlife Program and other efforts to manage and restore the region's aquatic resources. See attached web site information for: <ul style="list-style-type: none"> Publications Regional Mark Information System Passive Integrated Transponder Tag Information System StreamNet – Overview Essential Fish Habitat Information for Salmon 	X	X	X	X	X

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<ul style="list-style-type: none"> Sample of Marine Conservation Groups 					
<ul style="list-style-type: none"> Alaska Marine Conservation Council The Alaska Marine Conservation Council is a community-based organization of people who care about the health and future of Alaska's oceans and coastal communities. Our members are fishermen, subsistence harvesters, marine scientists, conservationists, small business owners and others. Our way of life, livelihoods and economies depend on healthy marine ecosystems. We are working to protect and restore our marine environment through sustainable fishing practices, habitat protection, and local stewardship. We support an ecosystem approach to research and marine resource management incorporating the best science, experiential knowledge, and the wisdom of tradition. Guiding Principles A healthy and diverse marine ecosystem has intrinsic value. People are a part of and depend upon a healthy and diverse marine ecosystem and have responsibility for maintaining them. Marine resource management must be comprehensive and incorporate indigenous, scientific, and experiential knowledge. The utilization of resources in the marine ecosystem must be managed to prevent over-exploitation, destruction, and neglect of these resources and associated habitats. Coastal residents have a valuable and unique perspective on the marine ecosystem and have the right to meaningful and influential participation on decisions. 	X	X	X	X	X
<ul style="list-style-type: none"> Alaska Conservation Alliance The Alaska Conservation Alliance is dedicated to strengthening environmental organizations and empowering individuals to protect Alaska's environment through public education, training, advocacy, communication and strategy development, all with respect for communities and human dignity. The ACA has a Water and Pollution issue group that examines legislation that would undermine public rights to clean air and water, as well as tracking available information on toxic waste sites. ACA is focused on maintaining balanced/intact ecosystems against the many threats to fish and wildlife habitat in Alaska including logging, oil and gas development, road building, bottom trawling, and political micro-management of fish & game resources. Web site http://www.akvoice.org/. 	X	X	X	X	X
<ul style="list-style-type: none"> Center for Marine Conservation Vision Statement 	X	X	X	X	X

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<p>We envision a world of healthy, protected oceans with wild and flourishing ecosystems, free of pollution and filled with diverse and abundant wildlife. The mission of the Center for Marine Conservation is to protect ocean ecosystems and conserve the global abundance and diversity of marine wildlife. Through science-based advocacy, research and public education, CMC informs, inspires and empowers people to speak and act for the oceans. In all its work, CMC strives to be the world's foremost advocate for the oceans.</p> <ul style="list-style-type: none"> • CMC Programs CMC 's programs focus on the following four goals: • Conserve and Restore Marine Fish Populations • Restore Clean Coastal and Ocean Waters • Conserve and Recover Vulnerable Marine Wildlife • Protect Ocean Ecosystems and Establish Ocean Wilderness <ul style="list-style-type: none"> • In addition to pursuing each of these goals, CMC has established several cross-cutting programs that include efforts to establish and assure proper management of marine protected areas, conservation of marine biological diversity, and building a constituency in support of domestic and international programs to conserve marine life and its habitat. The Center for Marine Conservation (CMC) was established in 1972 in Washington, D.C. As the nation's leading non-profit organization dedicated solely to protecting ocean environments and marine life in all its abundance and diversity, CMC is at the forefront of major issues affecting the oceans -- preventing pollution; protecting dolphins, whales, seals, sea turtles, and other marine species; preserving critical marine habitat; and ensuring the healthy future of our nation's fish population. • CMC has regional offices in Alaska, California, Florida, and New England and field offices in Santa Barbara and Santa Cruz, CA, Florida Keys, the U.S. Virgin Islands and the office of Pollution Prevention and Monitoring in Virginia Beach, VA. 28 Years of Ocean Activism Over the years CMC has established a tradition of open discussion and exchange of information with conservation groups, government officials, private industries, community organizations, and the general public. We firmly believe that no organization can achieve its goals working alone. This philosophy has made possible many opportunities for CMC to bring those with opposing viewpoints together to create progressive solutions to the many threats facing our marine environment today. Through science-based advocacy, research, and public education, the Center for Marine Conservation informs, inspires, and empowers people to speak and act for the oceans in order to protect ocean ecosystems and conserve the global abundance and diversity of marine wildlife. 					

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• Large Marine Ecosystem Program <ul style="list-style-type: none"> A global campaign is underway by the IUCN – The World Conservation Union, several United Nations agencies and the U.S. National Oceanic and Atmospheric Administration, to improve global prospects for the long-term sustainability of resources and environments of international coastal waters. Large Marine Ecosystems are regions of ocean space encompassing coastal areas from river basins and estuaries to the seaward boundary of continental shelves and the seaward margins of coastal current systems. They are relatively large regions characterized by distinct bathymetry, hydrography, productivity, and trophically dependent populations. Ecosystem Management Principles Emerging new paradigm for management Advocating long-term management at large spatial scales Management practices for sustainability of the productive potential of ecosystem goods and services. See attached web site information for: <ul style="list-style-type: none"> Brochure Publications Large Marine Ecosystems of the Pacific Rim: Assessment, Sustainability, and Management 	X	X	X	X	X

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<ul style="list-style-type: none"> • North Pacific Marine Science Organization (PICES) • PICES is a scientific organization that focuses on topics related to climate variability, ocean impacts at lower and top trophic levels, factors influencing fish stock fluctuations, human activities and marine environmental quality. • See attached web site information for: • Annual Meeting Schedule 					

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• Prince William Sound Science Center <ul style="list-style-type: none"> The mission of the Prince William Sound Science Center, an independent research and education institution, is threefold: To contribute to the comprehensive description, sustained monitoring and ecological understanding of Prince William Sound, the Copper River, and Gulf of Alaska. A commitment to maintain self-regulating and long-term biodiversity, productivity and sustainable use of renewable resources. To educate and inform the youth and the general public about the critical interdependence of the biology and regional economies of Alaska. The Prince William Sound Science Center is an independent, nonprofit research organization located in Cordova in southeastern Prince William Sound, Alaska. The Science Center was established in 1989 to conduct and facilitate scientific studies on the ecology of the region. The Center's programs take an ecosystem approach to research, monitoring and management of natural resources. The Center is currently working on the following projects: <ul style="list-style-type: none"> The Sound Ecosystem Assessment (SEA) Program Development of a geographic information system for the Greater Prince William Sound Region. Conferences on critical resource management issues Hydroacoustic surveys of salmon fry populations Survey of nearshore octopus Killerwhale database. See attached web site information for: <ul style="list-style-type: none"> Research Sound Ecosystem Assessment 	X	X	X	X	X

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